

TRIGGERS FOCUS GROUP
RECOMMENDATION #5
FOLLOW-UP MONITORING FOR TOXICITY EXCEEDANCES
2 May 2006

OBJECTIVE OF FOLLOW UP SAMPLING FOR TOXICITY EXCEEDANCES: The objective of this requirement is to obtain information regarding the source, frequency, and magnitude of the water quality exceedance.

PROBLEM STATEMENT: The Compliance Monitoring section of the draft Coalition Group MRP requires re-sampling at a monitoring site whenever a sample exceeds a receiving water limitation or water quality objective. Specifically, the draft MRP indicates that:

“the Coalition shall re-sample the monitoring site(s) where the exceedance was reported for each constituent that exceeds a receiving water limitation or water quality objective and at two or more sites upstream of the monitoring site with the exceedance (a total of three or more samples) within 72 hours of the submittal of the Exceedance Report....The Coalition Group will continue this re-sampling strategy for each detection that is an exceedance in the re-sampling results, until re-sampling results are below the receiving water limitation that implements the appropriate Basin Plan’s water quality objective.”

The Coalition Group MRP requires specific follow-up measures for toxicity testing based on the outcome of the toxicity test results. The follow-up measures are:

- Water samples that are “statistically significant” at the end of an acceptable test and that exhibit a $\geq 20\%$ reduction in organism response compared to the control will require follow-up sampling;
- Water samples that exhibit a $\geq 50\%$ reduction in organism response compared to the control will require a Toxicity Identification Evaluation (TIE); and
- Water samples that exhibit complete mortality compared to the control will require a multiple dilution series test.

The requirement of follow-up sampling after the observation of a $\geq 20\%$ reduction in organism response presents technical concerns for both storm event irrigation season monitoring. It is difficult, and can be extremely costly, to identify a source for an observed case of toxicity due to the temporal period that will have passed from the time of sample collection to the time that additional samples are collected (i.e., re-sampling would occur days after the original observation of the toxicity exceedance). During this time lag, the agricultural practices in the area may have changed and the water that was originally collected would have long since moved downstream. Re-sampling can assess the frequency and magnitude of the toxicity, yet there is no guarantee that the cause of toxicity in the original exceedance would be the same for any toxicity observed during a re-sampling effort.

Therefore, the Triggers Focus Group is making the following recommendation to the TIC:

RECOMMENDATION:

When an exceedance of a narrative toxicity objective is reported, the Coalition must implement a pre-determined follow-up plan in their Monitoring and Reporting Program Plan. This approach will provide flexibility for Coalitions to design site- (or watershed) specific, science-based approaches to address this requirement. It is expected that the proposed approach will be based on historical monitoring data and possibly knowledge of agricultural practices (e.g., current pesticide use data). Follow-up monitoring approaches may include, but may not be limited to, monitoring at two upstream sites, re-sampling of the site with the toxicity exceedance, use of historical data to design a re-sampling strategy, and dialogue and data from the County Agriculture Commissioner. See tables entitled “Irrigation Season Alternatives” and “Storm Water Alternatives” for the follow-up approaches discussed by the Triggers Focus Group of the Irrigated Lands Program Technical Issues Committee.

It is recommended that the narrative in the draft Coalition Group MRP be changed to read:

“the Coalition shall include a follow-up approach to address toxicity exceedances in their MRP Plan, and shall implement the approach via the methods and within the timeline outlined in the individual Coalition MRP Plan approved by the Executive Officer of the Central Valley Water Board. The Coalition will continue implementing their follow-up approach until a source or sources of the toxicity exceedance is identified via the methods and frequency proposed in the Coalition MRP. A definition of source or sources must be provided in the Coalition MRP, which may include, but is not limited to, an agricultural practice, upstream identification, non-farm related activities, or natural conditions.”